

IN THE CLAIMS

1. (Previously Presented) A process for determining methyl ter butyl ether (MTBE) vapours, in concentrations equal to or higher than 0.1 ppm, in the ground and overlying atmosphere comprising:

a) adopting a series of MTBE vapour sensors of which at least one in the earth, equipped with a membrane permeable to gases and impermeable to water, and at least

one in the air on the surface of the ground, these sensors comprising

- a sensitive element made of a semi-conductor metal oxide containing platinum; and

- a heater capable of bringing the temperature of said sensitive element to a range of 300 and 500°C;

b) - continuously observing the resistance variations of the sensitive elements by interaction with MTBE,

- comparing the signals emitted by the sensor in the earth and the sensor in the air on the ground-surface; and

- evaluating on the basis of this comparison the presence and concentration of MTBE in the surface layers or depths of the ground and in the atmosphere above the ground itself.

2. (Previously Presented) The process according to claim 1, wherein the sensitive element is produced with tin oxide.

3. (Currently Amended) A device for determining methyl ter butyl ether (MTBE) vapours comprising:

a) a series of sensors of MTBE vapours each comprising a sensitive element produced with

- a 40 micron layer of semiconductor metal oxide containing 1% by weight of platinum,

- a heater capable of bringing the temperature of said sensitive element to a range of 300 to 500°C,  
at least one of said sensors being equipped with a membrane permeable to gases and impermeable to water for the protection of said sensitive element;

b) an electronic evaluation system configured to continuously record the variations in resistance of the sensitive elements by interaction with MTBE, to compare the signals emitted by the sensor in the air on the surface of the ground, and to evaluate on the basis of the compared signals the presence and concentration of MTBE in the surface layers or depths of the ground and in the atmosphere above the ground itself;

wherein the semiconductor metal oxide is tin oxide.

4. (Cancelled)

5. (Cancelled)